

CLAIMS

1. A data receiving apparatus, comprising:

a buffer which preserves received packets;

5 a conversion means for reordering said packets according to a playback order;

a decision means for deciding whether the received time of said packets is before or after the playback time of said packets; and

10 a playback means for fetching only packets received at the time previous said playback time from said buffer, based on said decision result, and for regenerating them according to said playback order.

15 2. A data receiving apparatus, comprising:

a loss decision means for deciding whether there are lost packets in received packets or not;

20 a retransmission-request decision means for deciding whether said packet playback time is before or after the reception time at which said lost packets are received again after retransmission of said lost packets is requested; and

25 a retransmission request means for transmitting retransmission-request of said packets when time at which said packets are received again is before the playback time of said packets according to said decision result.

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3. A data receiving apparatus according to claim 2,
wherein said retransmission-request decision means

decides whether an addition result obtained by adding
round-trip-time, from time at which retransmission
request of said lost packets are transmitted to a
transmission apparatus transmitting packets, to time at
which said packets to be retransmitted are received, to
time at which retransmission of said packets is requested
is before the playback time of said packets to be played
back or not; and

instructs said retransmission-request means to
retransmit said lost packets, when said addition result
is before said playback time.

4. A data receiving apparatus according to claim 2,
wherein

packets indispensable for playback, and packets not
indispensable for playback are distinguished, based on
application information by which packets are played back;
priority is set to said packets; and said
retransmission-request decision means instructs said
retransmission-request means to retransmit said lost
packets when said lost packets are indispensable for said
playback.

5. A data receiving apparatus according to claim 4,
wherein

when said lost packets are packets not indispensable for playback, said retransmission-request decision means instructs said retransmission-request means to retransmit said lost packets, in the case of an amount
5 of transmission data, which is equal to or less than a predetermined value, from a transmission apparatus.

6. A data transmission apparatus comprising:

a transmission means for transmitting packets;
10 a receiving means for receiving retransmission request of said packets; and

a decision means for deciding whether said packets which are requested to be retransmitted are packets indispensable for playback or not, wherein,

15 when packets indispensable for playback are requested to be retransmitted, said transmission means performs priority retransmission of said packets, and, when packets not indispensable for playback are requested to be retransmitted, transmits said packets in the case
20 of no transmission of other packets.

7. A communication terminal apparatus provided with a data receiving apparatus, wherein

said data receiving apparatus comprises:

25 a buffer which preserves received packet data;
a conversion means for reordering said packets according to the playback order of said packets;

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a decision means for deciding whether the received time of said packets is before or after the playback time of said packets; and

a playback means for fetching only packets received
5 at the time previous said playback time from said buffer, based on said decision result, and for regenerating them according to said playback order.

8. A communication terminal apparatus provided with a
10 data receiving apparatus, wherein

said data receiving apparatus comprises:

a loss decision means for deciding whether there are lost packets in received packets;

a retransmission-request decision means for deciding
15 whether time, at which said packets are received again after retransmission of said lost packets is requested, is before or after the playback time of said packets; and

a retransmission request means for transmitting
20 retransmission-request of said packets when time at which said packets are received again is before the playback time of said packets according to said decision result.

9. A base station apparatus provided with a data
25 transmission apparatus, wherein

said data transmission apparatus comprises:

a transmission means for transmitting packets;

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a receiving means for receiving retransmission request; and

a decision means for deciding whether said packets which are requested to be retransmitted are packets
5 indispensable for playback or not, and wherein

when packets indispensable for playback are requested to be retransmitted, said transmission means performs priority retransmission of said packets, and, when packets not indispensable for playback are requested
10 to be retransmitted, transmits said packets in the case of no transmission of other packets.

10. A server apparatus provided with a data transmission apparatus, wherein

15 said data transmission apparatus comprises:

a transmission means for transmitting packets;

a receiving means for receiving retransmission request; and

a decision means for deciding whether said packets
20 which are requested to be retransmitted are packets indispensable for playback or not, and wherein,

when packets indispensable for playback are requested to be retransmitted, said transmission means performs priority retransmission of said packets, and,
25 when packets not indispensable for playback are requested to be retransmitted, transmits said packets in the case of no transmission of other packets.

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11. A data receiving apparatus, wherein
received packets are reordered according to a
playback order, and preserved; and

5 packets, among said received packets, whose received
time is before the playback time of said packets are played
back.

12. A data transmitting method, wherein

10 it is decided whether time, at which lost packets
are received again after retransmission of said lost
packets is requested, is before or after playback time
of said packets; and

15 retransmission-request of said packets is
transmitted when said time at which said packets are
received again is before the playback time of said packets.

13. A data transmitting method, wherein

20 when packets indispensable for playback are
requested to be retransmitted, priority retransmission
of said packets is performed, and,

25 when packets not indispensable for playback are
requested to be retransmitted, said packets are
transmitted in the case of no transmission of other
packets.

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